WSI Acrylic Dome Replacement

I. Purpose:

The purpose of this procedure is to provide the steps to replace the WSI acrylic dome.

II. Cautions and Hazards:

- None.

III. Requirements:

- 7” acrylic dome (Edmund Industrial Optics, D71-710)
- 734 silicon RTV, self-leveling (McMaster-Carr, 75825A1)
- WSI camera housing dome plate (MPL, 6201-04)
- WSI camera housing dome retainer (MPL, 6201-05)
- 4-40 x 3/8” socket head screws, Qty: 12 (McMaster-Carr, 92196A106)
- 3/32” hex driver (McMaster-Carr, 5374A11)
- Flathead screw driver (or similar prying tool)
- Paper towels
- Rubbing alcohol

IV. Procedure:

A. Steps:

1. Looking down at the top of the dome assembly, locate two concentric rings of 4-40 socket head screws. Remove the inner ring of screws (12 pieces) and lift off the camera housing dome retainer.

2. You will now have access to the acrylic dome flange. The flange is attached to the dome plate with 734 silicon RTV. Use a flathead screw driver (or similar prying tool) to break the seal and remove the dome.

3. Clean the residual RTV and any other debris off of the dome plate. A small amount of rubbing alcohol sometimes helps loosen the RTV. A clean, smooth surface is necessary for sealing the new dome in place.

4. Place a small bead of 734 RTV in the groove on the dome plate. Try to keep the bead as uniform as possible as you travel around the groove. Give the RTV a few seconds to begin leveling out in the groove.

5. Gently place the new dome into place, making sure the entire surface of the dome flange is falling within the groove on the Dome Plate. **Note: Do not press the dome down completely, just enough so that it fully engages the RTV. Try to avoid getting RTV on the curved surfaces of the dome. If you do, it's easiest to wait until the RTV dries completely, and then pull the RTV off.**

6. Place the dome retainer back on the assembly and insert the twelve 4-40 socket head screws. **Note: Do not tighten the screws down completely at this time. Overtightening will cause the RTV to squirt out of the groove, making a mess and compromising the seal.**

7. Let the assembly sit in this configuration for 3-4 hours, or until the RTV has cured. Now go back and tighten down the twelve retaining screws completely.

8. Re-attach the dome plate to the camera housing and test the system for leaks. If a leak is detected, you may need to remove and reseat the dome.

V. References:

None.

VI. Attachments:

None.